CHAPTER 4

BIOS Setup Information

ROBO-667 is equipped with the AWARD BIOS stored in Flash ROM. This BIOS has a built-in Setup program that allows users to modify the basic system configuration easily. This type of information is stored in CMOS RAM so that it can be retained during power-off periods. When system is turned on, ROBO-667 communicates with peripheral devices and check its hardware resources against the configuration information stored in the CMOS memory. If any error is detected, or the CMOS parameters need to be initially defined, the diagnostic program will prompt the user to enter the SETUP program. Some errors are significant enough to abort the start-up.

4.1 Entering Setup

Turn on or reboot the computer. When the message “Hit <DEL> if you want to run SETUP” appears, press <Del> key immediately to enter BIOS setup program.

If the message disappears before you respond, but you still wish to enter Setup, please restart the system to try “COLD START” again by turning it OFF and then ON, or touch the "RESET" button. You may also restart from “WARM START” by pressing <Ctrl>, <Alt>, and <Delete> keys simultaneously. If you do not press the keys at the right time and the system will not boot up, an error message will be displayed and you will again be asked to,

Press <F1> to Run SETUP or Resume

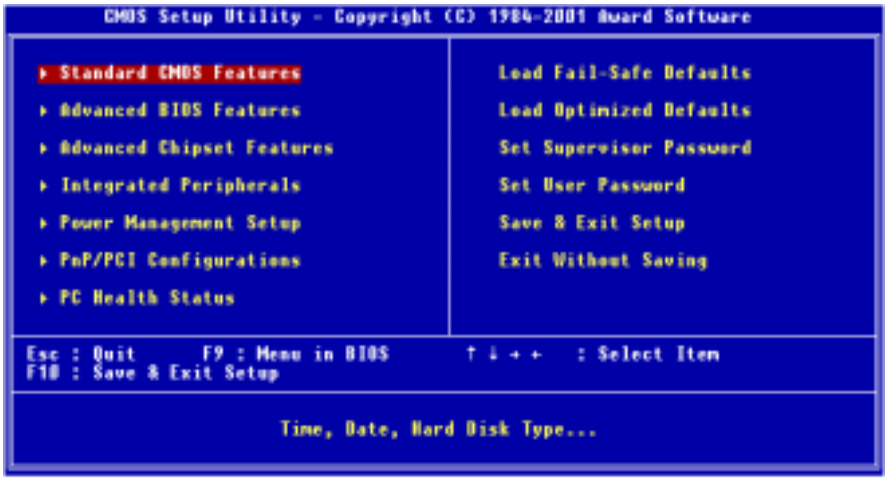
In HIFLEX BIOS setup, you can use the keyboard to choose among options or modify the system parameters to match the options with your system. The table below will show you all of keystroke functions in BIOS setup.

Keys to navigate within setup menu

Key	Functions
Up Arrow	Move to the previous item
Down Arrow	Move to the next item
Left Arrow	Move to the item on the left (menu bar)
Right Arrow	Move to the item on the right (menu bar)
Move Enter	Move to the item you desired
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
F1 key	General help on Setup navigation keys
F5 key	Load previous values from CMOS
F6 key	Load the fail-safe defaults from BIOS default table
F7 key	Load the optimized defaults
F10 key	Save all the CMOS changes and exit

4.2 Main Menu

Once you enter ROBO-667 AWARD BIOS CMOS Setup Utility, you should start with the Main Menu. The Main Menu allows you to select from eleven setup functions and two exit choices. Use arrow keys to switch among items and press <Enter> key to accept or bring up the sub-menu.

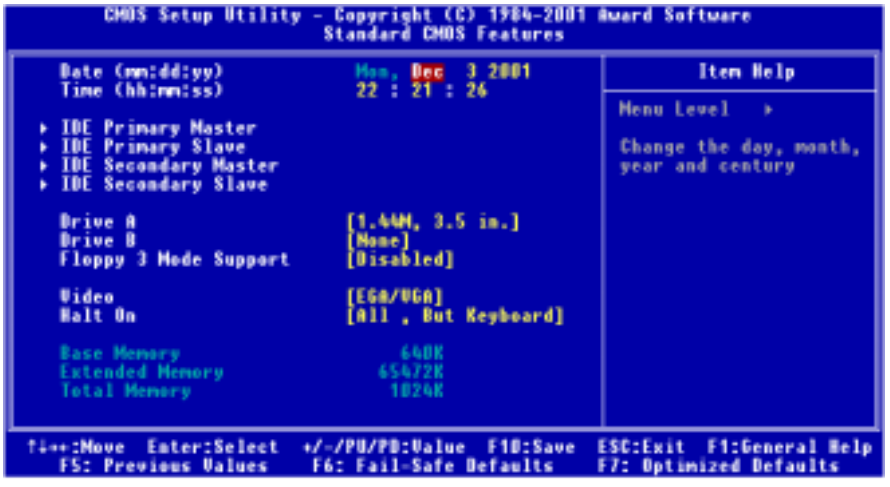


NOTE : It is strongly recommended to reload Optimal Setting if CMOS is lost or BIOS is updated.

4.3 Standard CMOS Setup Menu

This setup page includes all the items in a standard compatible BIOS. Use the arrow keys to highlight the item and then use the <PgUp>/<PgDn> or <+>/<-> keys to select the value or number you want in each item and press <Enter> key to certify it.

Follow command keys in CMOS Setup table to change **Date**, **Time**, **Drive type**, and **Boot Sector Virus Protection Status**.


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Standard CMOS Features
Date (mm:dd:yy) Mon, Dec 3 2001
Time (hh:mm:ss) 22 : 21 : 26
IDE Primary Master
IDE Primary Slave
IDE Secondary Master
IDE Secondary Slave
Drive A [1.44M, 3.5 in.]
Drive B [None]
Floppy 3 Mode Support [Disabled]
Video [EGA/VGA]
Halt On [All , But Keyboard]
Base Memory 640K
Extended Memory 65472K
Total Memory 1024K
Item Help
Menu Level ▸
Change the day, month, year and century
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

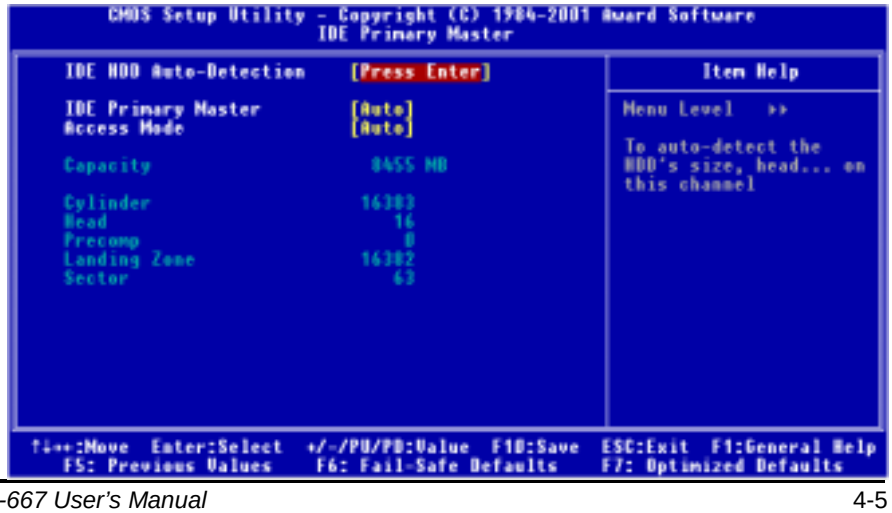
■ Menu seletions

Item	Options	Description
Date	Mm:dd:yy	Set the system date. Note that the 'Day' automatically changes when you set the date
Time	Hh:mm:ss	Set the system time
IDE Primary Master	Options are in its sub menu (described in 4.4 Table)	Press <Enter> to enter the sub menu of detailed options
IDE Primary Slave	Options are in its sub menu (described in 4.4 Table)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Master	Options are in its sub menu (described in 4.4 Table)	Press <Enter> to enter the sub menu of detailed options
IDE Secondary Slave	Options are in its sub menu (described in 4.4 Table)	Press <Enter> to enter the sub menu of detailed options

Item	Options	Description
Drive A Drive B	None 360K, 5.25 in 1.2M, 5.25 in 720K, 3.5 in 1.44M, 3.5 in 2.88M, 3.5 in	Select the type of floppy disk drive installed in your system
Floppy 3 Mode Support	Disabled Drive A Drive B Both	Select which drive you would like to set to floppy 3 mode.
Video	EGA/VGA CGA 40 CGA 80 MONO	Select the default video device
Halt On	All Errors No Errors All, but Keyboard All, but Diskette All, but Disk/Key	Select the situation in which you want the BIOS to stop the POST process and notify you
Base Memory	N/A	Displays the amount of conventional memory detected during boot up
Extended Memory	N/A	Displays the amount of extended memory detected during boot up
Total Memory	N/A	Displays the total memory available in the system

4.4 IDE Adaptors Setup Menu

The IDE adapters control the IDE devices, such as hard disk drive or cdrom drive. It uses a separate sub menu to configure each hard disk drive.

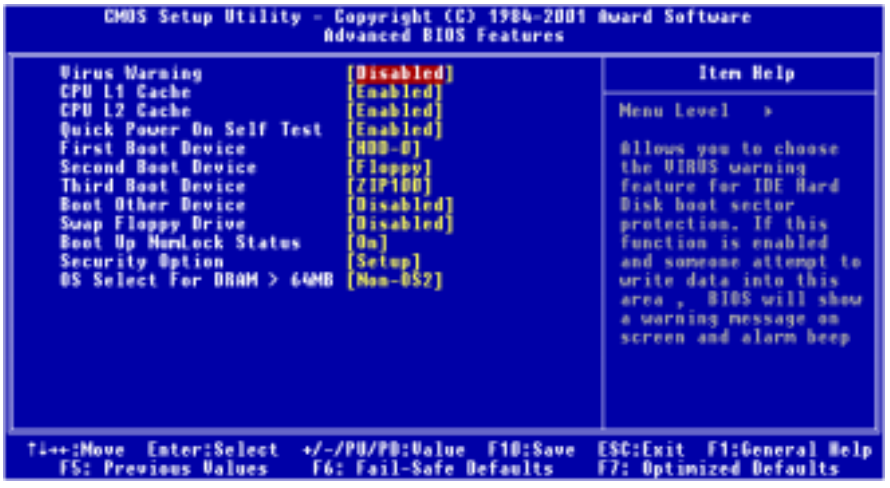

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
IDE Primary Master
IDE HDD Auto-Detection [Press Enter]
IDE Primary Master [Auto]
Access Mode [Auto]
Capacity 8455 MB
Cylinder 16383
Head 16
Precomp 0
Landing Zone 16382
Sector 63
Item Help
Menu Level >>
To auto-detect the HDD's size, head... on this channel
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

■ Menu seletions

Item	Options	Description
IDE HDD Auto-detection	Press Enter	Press Enter to auto-detect the HDD on this channel. If detection is successful, it fills the remaining fields on this menu.
IDE Primary Master	None Auto Manual	Selecting 'manual' lets you set the remaining fields on this screen. Selects the type of fixed disk. "User Type" will let you select the number of cylinders, heads, etc. Note: PRECOMP=65535 means NONE !
Access Mode	CHS LBA Large Auto	Choose the access mode for this hard disk
Capacity	Auto Display your disk drive size	Disk drive capacity (Approximated). Note that this size is usually slightly greater than the size of a formatted disk given by a disk checking program.
The following options are selectable only if the 'IDE Primary/Secondary Master/Slave' item is set to 'Manual'		
Cylinder	Min = 0 Max = 65535	Set the number of cylinders for this hard disk.
Head	Min = 0 Max = 255	Set the number of read/write heads
Precomp	Min = 0 Max = 65535	**** **Warning**: Setting a value of 65535 means no hard disk
Landing zone	Min = 0 Max = 65535	****
Sector	Min = 0 Max = 255	Number of sectors per track

4.5 Advanced BIOS Features

This section allows you to configure your system for basic operation. You have the opportunity to select the system's default speed, boot-up sequence, keyboard operation, shadowing and security.


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Advanced BIOS Features
Virus Warning [Disabled]
CPU L1 Cache [Enabled]
CPU L2 Cache [Enabled]
Quick Power On Self Test [Enabled]
First Boot Device [HDD-0]
Second Boot Device [Floppy]
Third Boot Device [ZIP100]
Boot Other Device [Disabled]
Swap Floppy Drive [Disabled]
Boot Up NumLock Status [On]
Security Option [Setup]
OS Select For DRAM > 64MB [Non-OS2]
Item Help
Menu Level ▸
Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area , BIOS will show a warning message on screen and alarm beep
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Virus Warning

Enabled	Activates automatically when the system boots up causing a warning message to appear when anything attempts to access the boot sector or hard disk partition table.
Disabled	No warning message will appear when anything attempts to access the boot sector or hard disk partition table.

L1 Cache/L2 Cache

These two categories speed up memory access. However, it depends on CPU/chipset design.

Enabled	Enable cache
Disabled	Disable cache

Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power up the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

Enabled	Enable quick POST
Disabled	Normal POST

First/Second/Third Boot Device

The BIOS attempts to load the operating system from the devices in the sequence selected in these items.

Boot Other Device

Select whether the system searches for other bootable device or not when First/Second/Third Boot Device can't boot.

Swap Floppy Drive

This choice can swap drive A and B needless to open a chassis and exchange cable connectors.

Boot Up NumLock Status

Select power on state for NumLock.

The choice: Off/On.

Security Option

Select whether the password is required every time the system boots or only when you enter setup.

System	The system will not boot and access to Setup will be denied if the correct password is not entered at the prompt.
Setup	The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt.

Note : To disable security, select PASSWORD SETTING at Main Menu and then you will be asked to enter password. Do not type anything and just press <Enter>, it will disable security. Once the security is disabled, the system will boot and you can enter Setup freely.

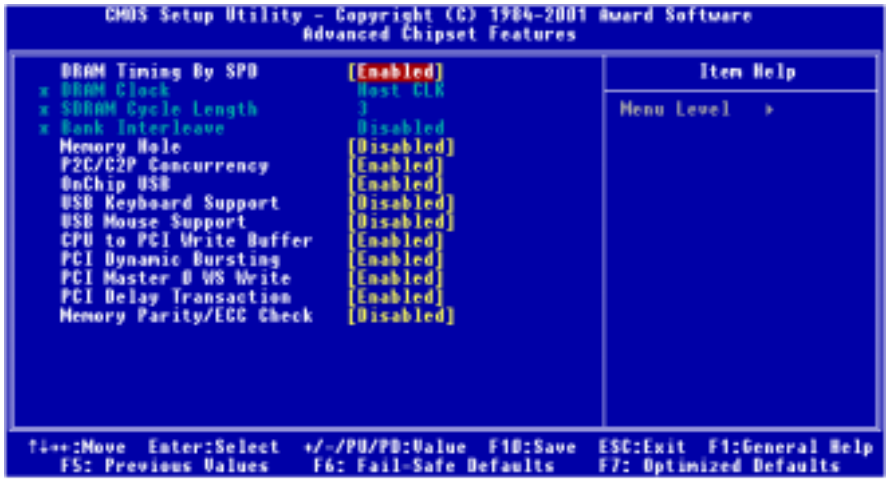
OS Select For DRAM > 64MB

Select the operating system that is running with greater than 64MB of RAM on the system.

The choice: Non-OS2, OS2.

4.6 Advanced Chipset Features

This section allows you to configure the system based on the specific features of the VIA Apollo Pro133T. This chipset manages bus speeds and access to system memory resources such as DRAM (SDRAM). It must be stated that these items should never need to be altered. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any change would be if you discovered that data was being lost while using your system.


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Advanced Chipset Features
DRAM Timing By SPD [Enabled]
x DRAM Clock Host CLK
x SDRAM Cycle Length 3
x Bank Interleave Disabled
Memory Hole [Disabled]
P2C/C2P Concurrency [Enabled]
OnChip USB [Enabled]
USB Keyboard Support [Disabled]
USB Mouse Support [Disabled]
CPU to PCI Write Buffer [Enabled]
PCI Dynamic Bursting [Enabled]
PCI Master 0 WS Write [Enabled]
PCI Delay Transaction [Enabled]
Memory Parity/ECC Check [Disabled]
Item Help
Menu Level ▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

This chipset settings deal with CPU access to dynamic random access memory (DRAM). The default timing has been carefully chosen and should only be altered if data is being lost. Such a scenario might well occur if your system had mixed speed DRAM chips installed so that greater delays may be required to preserve the integrity of the data held in the slower memory chips.

DRAM Timing By SPD

If DIMMs have On-Board Serial Presence Detect (SPD) function, please set it enabled for autodetecting oppotimize DRAM timing.

DRAM Clock

VIA Apollo Pro133T allows users to adjust DRAM clock by referencing CPU clock (HCLK).There are three modes: HCLK-33MHz, HCLK and HCLK+33MHz.

SDRAM Cycle Latency

This option selects in units of local memory clock periods.

The Choice: 2, 3 SCLKs.

Bank Interleave

There are three modes: disable, 2-way and 4-way. “4-way” has bestest executive performance but needs DIMMs hardware specification support. If not suring DIMMs can support SPD or not, please set this choice at “disable” for maximum stabilty.

Memory Hole

In order to improve performance, certain space in memory is reserved for ISA cards. This memory must be mapped into the memory space below 16MB.

P2C/C2P Concurrency

Select the P2C (PCI to CPU) and C2P (CPU to PCI) are synchronized or not.

OnChip USB

Select for enable/disable on board USB (VT82C686B included).

USB Keyboard Support

Select for enable/disable USB Keyboard support. Don't enable this choice when using Microsoft Windows NT 4.0. That will cause system halt because NT does not support USB keyboard function.

USB Mouse Support

Select for enable/disable USB Mouse support. Don't enable this choice when using Microsoft Windows NT 4.0. That will cause system halt because NT not support USB.

CPU to PCI Write Buffer

Enable the choice to open buffer for solving the low performance of data writen form CPU to PCI device.Please enable it if there is not any error occurred

PCI Dynamic Bursting

When enabling, any data transfer on PCI-BUS will directly transmit without Buffer on VT82C694T.

PCI Master 0 WS Write

After PCI-Receiver is ready to receive data, PCI-master will immediately send data (select Enable) or delay a PCI condition cycle (select Disable).

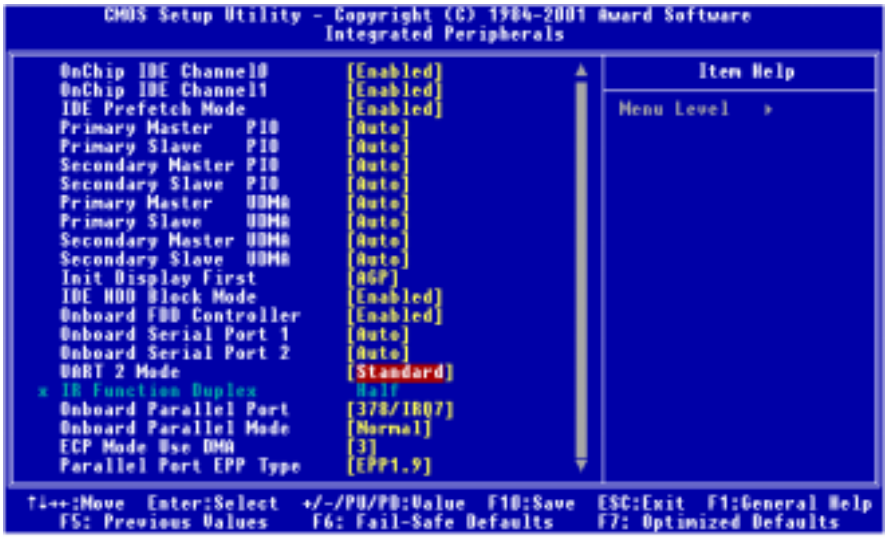
PCI Delayed Transaction

Select "Enabled" to enable delay transaction.This will enhance performance for data transmission between different PCI bus.

Memory Parity/ECC Check

System will check DIMMs are 72-bits (support ECC) or 64-bits (not support ECC).

4.7 Integrated Peripherals


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Integrated Peripherals
OnChip IDE Channel0 [Enabled]
OnChip IDE Channel1 [Enabled]
IDE Prefetch Mode [Enabled]
Primary Master PIO [Auto]
Primary Slave PIO [Auto]
Secondary Master PIO [Auto]
Secondary Slave PIO [Auto]
Primary Master UDMA [Auto]
Primary Slave UDMA [Auto]
Secondary Master UDMA [Auto]
Secondary Slave UDMA [Auto]
Init Display First [AGP]
IDE HDD Block Mode [Enabled]
Onboard FDD Controller [Enabled]
Onboard Serial Port 1 [Auto]
Onboard Serial Port 2 [Auto]
UART 2 Mode [Standard]
x IR Function Duplex Half
Onboard Parallel Port [378/IRQ7]
Onboard Parallel Mode [Normal]
ECP Mode Use DMA [3]
Parallel Port EPP Type [EPP1.9]
Item Help
Menu Level ▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

OnChip IDE Channel 0/1

Enable or disable on board IDE controller.

IDE Prefetch Mode

Set enable for the most of cases. If a HDD is too old to support Prefetch Mode, please disable this function.

IDE Primary/Secondary Master/Slave PIO

The four IDE PIO (Programmed Input/Output) fields let you set a PIO mode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

The choice: Auto, Mode 0, Mode 1, Mode 2, Mode 3, Mode 4.

IDE Primary/Secondary Master/Slave UDMA

Ultra DMA/33/66/100 implementation is possible only if your IDE hard drive supports it and the operating environment includes a DMA driver. If your hard drive and your system software both support Ultra DMA/33/66/100, select Auto to enable BIOS support.

Init Display First

This item allows you to select the first display port at AGP or PCI to be initialized. ATI M/M1 VGA Chip supports AGP 2X, so please set “AGP” if onboard VGA is needed to be used.

IDE HDD Block Mode

This item allows you to enable/disable IDE HDD Block Mode. The function is to collect the data that is nearby the one being read and leave them in the system buffer. Buffered data can be used with faster transmission rate so as to enhance system performance.

Onboard FDC Controller

This item allows you to enable/disable onboard Floppy disk controller.

The choice: Enabled/Disabled

Onboard Serial Port 1/Port 2

Select an address and corresponding interrupt for the first and second serial ports.

The choice: 3F8/IRQ4, 2E8/IRQ3, 3E8/IRQ4, 2F8/IRQ3, Disabled, Auto.

UART 2 Mode

This item allows users to select Infrared transmission mode.

Standard	Disable Infrared function
HPSIR	Select IrDA mode transmission
ASKIR	Select ASKIR mode transmission

As Infrared transmission function shares onboard serial port 2, COM2 needs to be enabled.

IR Function Duplex

Select Full-Duplex(enable bidirectional data transmission at the same time) or Helf-Duplex(only allow single directional data transmission at the same time)

Onboard Parallel Port

This item allows you to configure I/O address of the onboard parallel port.

The Choices : Disabled, 378/IRQ7, 278/IRQ5, 3BC/IRQ7

Parallel Port Mode

There are four different modes for the onboard parallel port :

SPP	Switch to SPP mode
EPP	Switch to EPP mode
ECP	Switch to ECP mode
ECP / EPP	Switch to ECP or EPP mode
Normal	Switch to Normal mode

ECP Mode Use DMA

Select a proper DMA channel for ECP mode.

The choices : 3/1

EPP Mode Select

Select different version of EPP mode.

The choices : EPP1.7/EPP1.9

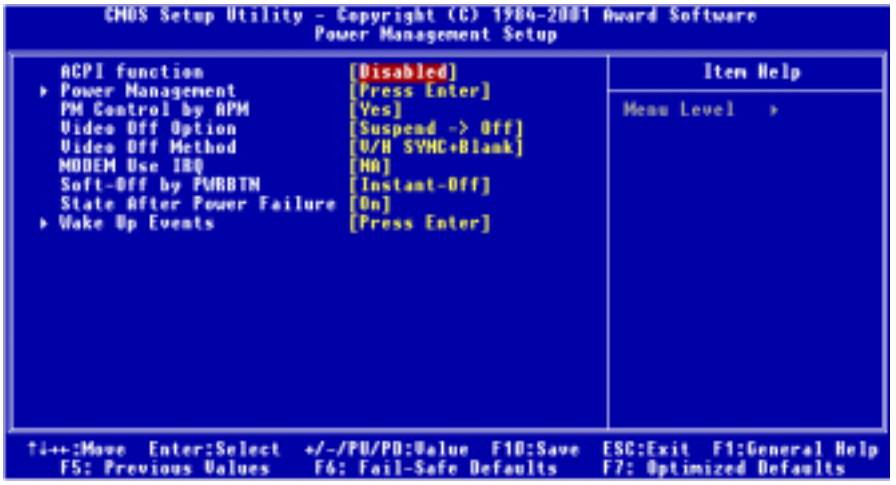
PWRON After PWR-Fail

This item allows user to configure the power status of using ATX power supply after a serious power loss occurs.

On	System automatically restores power back
Off	System stays at power –off
Former-Sts	System restores back to previous status (On or Off)

4.8 Power Management Setup

The Power Management Setup allows you to configure you system to most effectively save energy while operating in a manner consistent with your own style of computer use.

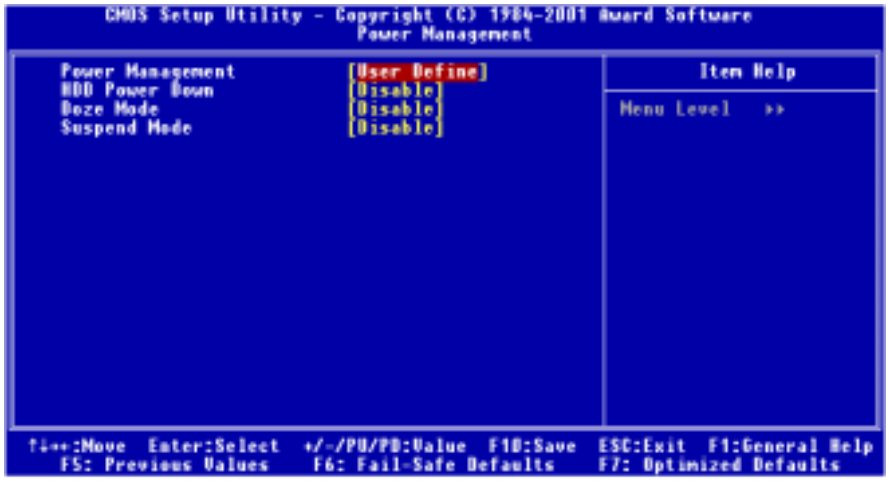

CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Power Management Setup
ACPI function [Disabled]
Power Management [Press Enter]
PM Control by APM [Yes]
Video Off Option [Suspend -> Off]
Video Off Method [V/H SYNC+Blank]
MODEM Use IRQ [NA]
Soft-Off by PWRBTN [Instant-Off]
State After Power Failure [On]
Wake Up Events [Press Enter]
Item Help
Menu Level ▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

ACPI Function

This item allows you to enable/disable the Advanced Configuration and Power Management (ACPI). When AT power supply is the system power source, keeping “ACPI function” at “NO” and “State After Power Failure” at “ON” in the Power Management Setup of the BIOS is recommended. If using ATX power supply, remember to adjust the “State After Power Failure” to proper condition.

The choices : Enabled/Disabled.

Power Management


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Power Management
Power Management [User Define]
HDD Power Down [Disable]
Doze Mode [Disable]
Suspend Mode [Disable]
Item Help
Menu Level ▸▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

This category allows you to select the type (or degree) of power saving and is directly related to "HDD Power Down", "Doze Mode" and "Suspend Mode".

There are three selections for Power Management, three of which have fixed mode settings.

Min. Power Saving	Minimum power management. Suspend Mode = 1 hr., and HDD Power Down = 15 min.
Max. Power Saving	Maximum power management. Suspend Mode = 1 min., and HDD Power Down = 1 min.
User Defined	Allows you to set each mode individually. When not disabled, Suspend Mode ranges from 1 min. to 1 hr. and HDD Power Down ranges from 1 min. to 15 min.

PM Control by APM

This item allow APM(Advantanced Power Management) to control Power Management.

The choices : Enabled/Disabled.

Video Off Method

This determines the manner in which the monitor is blanked.

V/H SYNC+Blank	This selection will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
Blank Screen	This option only writes blanks to the video buffer.
DPMS	Initial display power management signaling.

MODEM Use IRQ

Assign a IRQ for modem after installed a modem device

The choices : NA,3,4,5,7,9,10,11

Soft-Off by PWRBTN

This item allows users to set the time to remove the power after the power button is pressed.

The choices : Instant-Off/Delay 4 Sec

State After Power Failure

An ATX power supply software control mathod has 3 modes : On, Off and Auto.

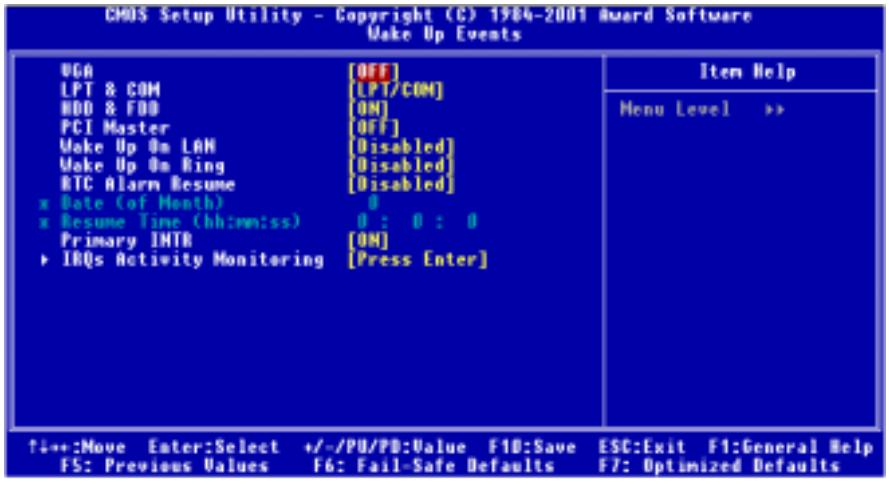
"On" means that power generation always restart after incorrect AC power loss and AC power recovered. "Off" means that power generation never restart after incorrect AC power loss unless pressing Power-Botton again. "Auto" means that system will control power on or off after incorrect AC power loss and recovery. If last system state is power off, the power supply always be shut-down unless pressing Power-Botton. On the contrary, if last system state is power-on while

AC power incorrect loss, power supply will be restart automatically after AC power recovered.

Note: Basing on the chipset architecture, this item must be set as “ON” when using “AT Power Supply”, or else may results into a unboot condition.

Wake Up Events

This item allows users to set events which can wake up asleep system.


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
Wake Up Events
VGA [OFF]
LPT & COM [LPT/COM]
HDD & FDD [ON]
PCI Master [OFF]
Wake Up On LAN [Disabled]
Wake Up On Ring [Disabled]
RTC Alarm Resume [Disabled]
x Date (of Month) 0
x Resume Time (hh:mm:ss) 0 : 0 : 0
Primary INTR [ON]
▸ IRQs Activity Monitoring [Press Enter]
Item Help
Menu Level ▸▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

VGA, LPT & COM, HDD & FDD, PCI Master

Those items can be set enable/disable to wake up system. Once they have any status occurred, system at suspend mode will wake up.

Wake Up On LAN

The options availabled are enabled/disabled. When selecting “Enabled” a system that is at soft-off mode will be alert to Wake-On-LAN signal.

Wake Up On Ring

When “Enabled” is selected, a system that is at soft-off mode will be alert to Wake-On-Modem signal.

The choices : Enabled/Disabled

RTC Alarm Resume

This item allows users to enable/disable the resume by alarm function. When "Enabled" is selected, system using ATX power supply could be powered on if a customized time and day is approached.

Date(of Month)

When "Resume by Alarm" is enabled, this item could allow users to configure the date parameter of the timing dateline on which to power on the system.

The choices : 0 ~ 31

Resume Time(hh:mm:ss)

When "Resume by Alarm" is enabled, this item could allow users to configure the time parameter of the timing dateline on which to power on the systm.

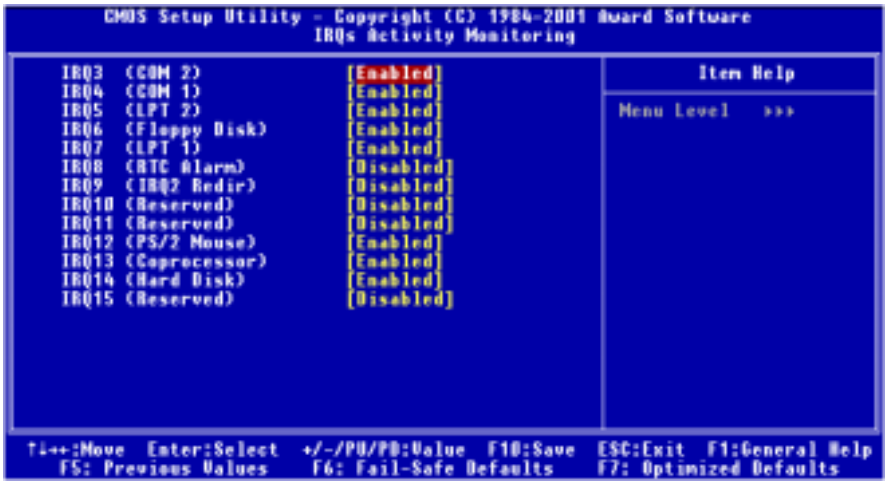
The choices : hh (0~23), mm (0~59), ss (0 ~59)

Primary INTR

When setting this item "on", any enabled events in "IRQs Activity Monitoring" has ability to wake up asleep system. It includes：

IRQ3 (COM 2)
IRQ4 (COM 1)
IRQ5 (LPT 2)
IRQ6 (Floppy Disk)
IRQ7 (LPT 1)
IRQ8 (RTC Alarm)
IRQ9 (IRQ2 Redir)
IRQ10 (Reserved)
IRQ11 (Reserved)
IRQ12 (PS/2 Mouse)
IRQ13 (Coprocessor)
IRQ14 (Hard Disk)

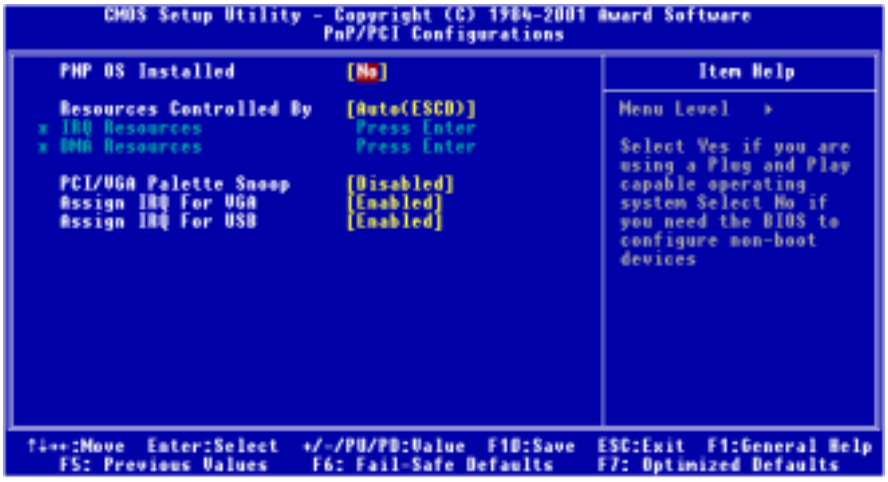
IRQ15 (Reserved)


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
IRQs Activity Monitoring
IRQ3 (COM 2) [Enabled]
IRQ4 (COM 1) [Enabled]
IRQ5 (LPT 2) [Enabled]
IRQ6 (Floppy Disk) [Enabled]
IRQ7 (LPT 1) [Enabled]
IRQ8 (RTC Alarm) [Disabled]
IRQ9 (IRQ2 Redir) [Disabled]
IRQ10 (Reserved) [Disabled]
IRQ11 (Reserved) [Disabled]
IRQ12 (PS/2 Mouse) [Enabled]
IRQ13 (Coprocessor) [Enabled]
IRQ14 (Hard Disk) [Enabled]
IRQ15 (Reserved) [Disabled]
Item Help
Menu Level >>>
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

4.9 PnP/PCI Configuration Setup

This section describes configuring the PCI bus system. PCI, or **P**ersonal **C**omputer **I**nterconnect, is a system which allows I/O devices to operate at speeds nearing the speed the CPU itself uses when communicating with its own special components.

This section covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
PnP/PCI Configurations
PNP OS Installed [No]
Resources Controlled By [Auto(ESCD)]
x IRQ Resources Press Enter
x DMA Resources Press Enter
PCI/VGA Palette Snoop [Disabled]
Assign IRQ For VGA [Enabled]
Assign IRQ For USB [Enabled]
Item Help
Menu Level ▸
Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

PNP OS Installed

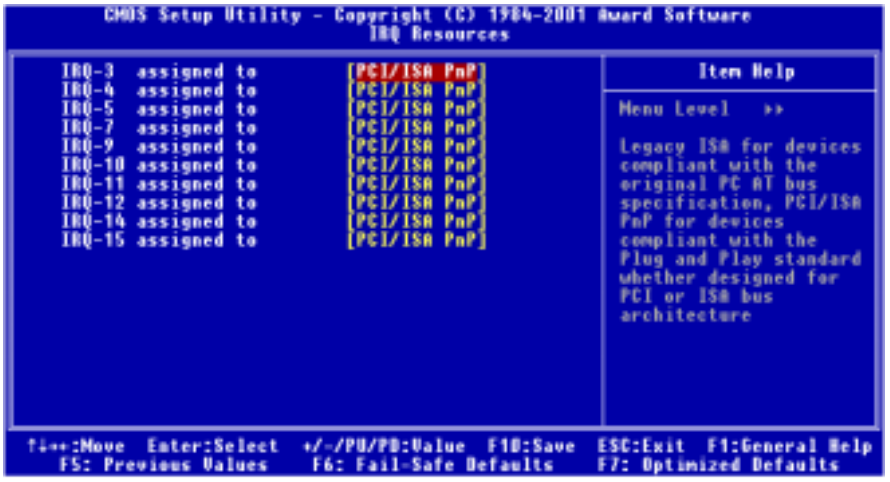
Select Yes if you are using a Plug and Play capable operating system. Select No if you need the BIOS to configure non-boot devices.

Resource controlled by

The Award Plug and Play BIOS has the capacity to automatically configure all of the boot and Plug and Play compatible devices. However, this capability means absolutely nothing unless you are using a Plug and Play operating system such as Windows®95. If you set this field to “manual” choose specific resources by going into each of the sub menu that follows this field (a sub menu is preceded by a “➢”).

The choice: Auto (ESCD), Manual.

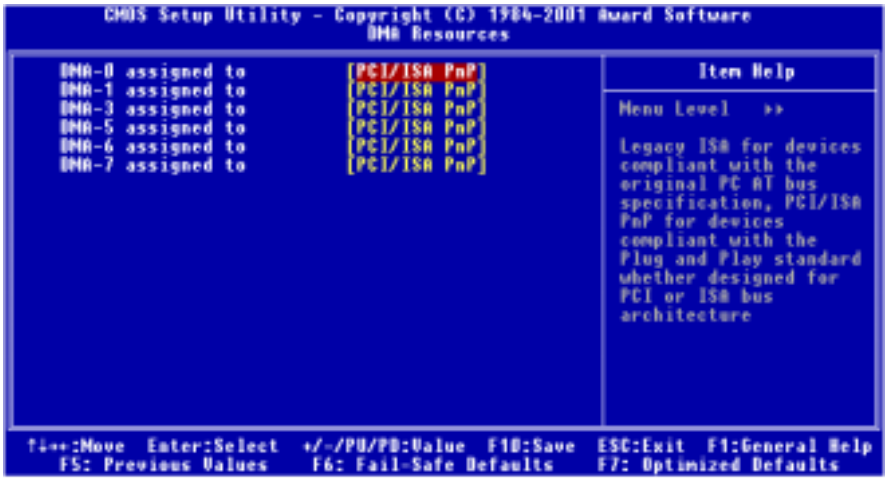
IRQ Resources


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
IRQ Resources
IRQ-3 assigned to [PCI/ISA PnP]
IRQ-4 assigned to [PCI/ISA PnP]
IRQ-5 assigned to [PCI/ISA PnP]
IRQ-7 assigned to [PCI/ISA PnP]
IRQ-9 assigned to [PCI/ISA PnP]
IRQ-10 assigned to [PCI/ISA PnP]
IRQ-11 assigned to [PCI/ISA PnP]
IRQ-12 assigned to [PCI/ISA PnP]
IRQ-14 assigned to [PCI/ISA PnP]
IRQ-15 assigned to [PCI/ISA PnP]
Item Help
Menu Level ▸▸
Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

When resources are controlled manually, assign each system interrupt a type, depending on the type of device using the interrupt. It allows you to determine the IRQ assigned to the ISA bus and is not available to any PCI slot. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

The Choice: “Legacy ISA” and “PCI/ISA PnP”

DMA Resources


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
DMA Resources
DMA-0 assigned to [PCI/ISA PnP]
DMA-1 assigned to [PCI/ISA PnP]
DMA-3 assigned to [PCI/ISA PnP]
DMA-5 assigned to [PCI/ISA PnP]
DMA-6 assigned to [PCI/ISA PnP]
DMA-7 assigned to [PCI/ISA PnP]
Item Help
Menu Level ▸▸
Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

When resources are controlled manually, assign each system DMA channel a type, depending on the type of device using the DM channel. Legacy ISA for devices compliant with the original PC AT bus specification, PCI/ISA PnP for devices compliant with the Plug and Play standard whether designed for PCI or ISA bus architecture.

The Choice: “Legacy ISA” and “PCI/ISA PnP”

PCI/VGA Palette Snoop

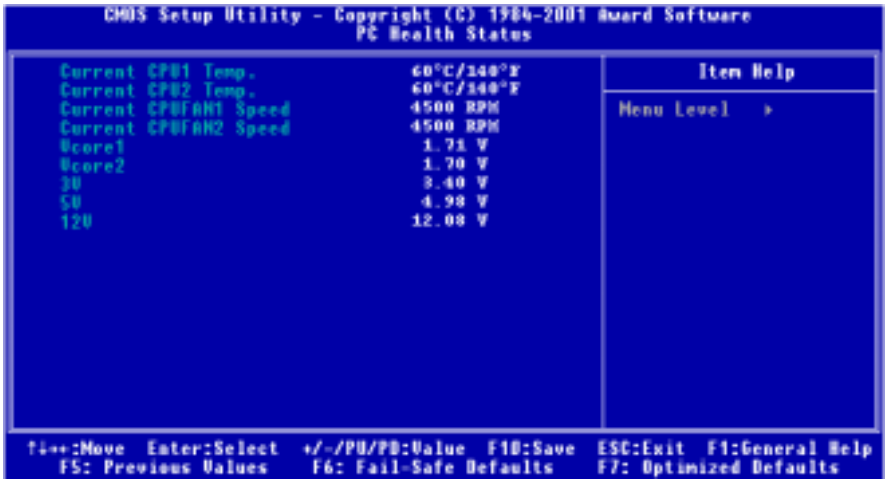
Leave this field at Disabled.

The choices : Enabled/Disabled.

Assign IRQ For VGA/USB

To enable VGA/USB IRQ assignation by selecting enabled.

4.10 PC Health Status


CMOS Setup Utility - Copyright (C) 1984-2001 Award Software
PC Health Status
Current CPU1 Temp. 60°C/140°F
Current CPU2 Temp. 60°C/140°F
Current CPUFAN1 Speed 4500 RPM
Current CPUFAN2 Speed 4500 RPM
Vcore1 1.71 V
Vcore2 1.70 V
3V 3.40 V
5V 4.98 V
12V 12.08 V
Item Help
Menu Level ▸
↑↓→←:Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

4.11 Default Menu

Selecting “Defaults” from the main menu shows you two options which are described below

Load Fail-Safe Defaults
When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Fail-Safe Defaults (Y/N) ? N

Pressing ‘Y’ loads the BIOS default values for the most stable, minimal-performance system operations.

Load Optimized Defaults
When you press <Enter> on this item you get a confirmation dialog box with a message similar to:

Load Optimized Defaults (Y/N) ? N

Pressing ‘Y’ loads the default values that are factory settings for optimal performance system operations.

4.12 Supervisor/User Password Setting

You can set either supervisor’s or user’s password, or both of them. The differences between them are as follow:

Supervisor password : can enter and change the options of the setup menus.

User password : just can only enter but do not have the right to change the options of the setup menus. When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

ENTER PASSWORD

Type the password, up to eight characters in length, and press <Enter>. The password typed now will clear any previously entered password from CMOS memory. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable a password, just press <Enter> when you are prompted to enter the password. A message will confirm the password will be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

PASSWORD DISABLED

When a password has been enabled, you will be prompted to enter it every time you try to enter Setup. This prevents an unauthorized person from changing any part of your system configuration.

Additionally, when a password is enabled, you can also require the BIOS to request a password every time your system is rebooted. This would prevent unauthorized use of your computer.

You determine when the password is required within the BIOS Features Setup Menu and its Security option (see Section 3). If the Security option is set to "System", the password will be required both at boot and at entry to Setup. If set to "Setup", prompting only occurs when trying to enter Setup.

4.13 Exiting Selection

Save & Exit Setup

Pressing <Enter> on this item asks for confirmation:

Save to CMOS and EXIT (Y/N)? Y

Pressing "Y" stores the selections made in the menu in CMOS – a special section of memory that stays on after you turn your system off. The next time you boot your computer, the BIOS configures your system according to the Setup selections stored in CMOS. After saving the values the system is restarted again.

Exit Without Saving

Pressing <Enter> on this item asks for confirmation:

Quit without saving (Y/N)? Y

This allows you to exit Setup without storing in CMOS any change. The previous selections remain in effect. This exits the Setup utility and restarts your computer.

4.14 POST Messages

During the Power On Self-Test (POST), if the BIOS detects an error requiring you to do something to fix, it will either sound a beep code or display a message. If a message is displayed, it will be accompanied by:

PRESS F1 TO CONTINUE, CTRL-ALT-ESC OR DEL TO ENTER SETUP

POST Beep

Currently there are two kinds of beep codes in BIOS. This code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by two short beeps. The other code indicates that your DRAM error has occurred. This beep code consists of a single long beep repeatedly.

Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list includes messages for both the ISA and the EISA BIOS.

CMOS BATTERY HAS FAILED

CMOS battery is no longer functional. It should be replaced.

CMOS CHECKSUM ERROR

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER

No boot device was found. This could mean that either a boot drive was not detected or the drive does not contain proper system boot files. Insert a system disk into Drive A: and press <Enter>. If you assumed the system would boot from the hard drive, make sure the controller is inserted correctly and all cables are properly attached. Also be sure the disk is formatted as a boot device. Then reboot the system.

DISKETTE DRIVES OR TYPES MISMATCH ERROR - RUN SETUP

Type of diskette drive installed in the system is different from the CMOS definition. Run Setup to reconfigure the drive type correctly.

DISPLAY SWITCH IS SET INCORRECTLY

Display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different setting than indicated in Setup. Determine which setting is correct, and then either turn off the system and change the jumper, or enter Setup and change the VIDEO selection.

DISPLAY TYPE HAS CHANGED SINCE LAST BOOT

Since last powering off the system, the display adapter has been changed. You must configure the system for the new display type.

EISA Configuration Checksum Error PLEASE RUN EISA CONFIGURATION UTILITY

The EISA non-volatile RAM checksum is incorrect or cannot correctly read the EISA slot. This can indicate either the EISA non-volatile memory has become corrupt or the slot has been configured incorrectly. Also be sure the card is installed firmly in the slot.

EISA Configuration Is Not Complete PLEASE RUN EISA CONFIGURATION UTILITY

The slot configuration information stored in the EISA non-volatile memory is incomplete.

Note: When either of these errors appear, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

ERROR ENCOUNTERED INITIALIZING HARD DRIVE

Hard drive cannot be initialized. Be sure the adapter is installed correctly and all cables are correctly and firmly attached. Also be sure the correct hard drive type is selected in Setup.

ERROR INITIALIZING HARD DISK CONTROLLER

Controller cannot be initialized. Make sure the cord is correctly and firmly installed in the bus. Be sure the correct hard drive type is selected in Setup. Also check to see if any jumper needs to be set correctly on the hard drive.

FLOPPY DISK CNTRLR ERROR OR NO CNTRLR PRESENT

The system cannot find or initialize the floppy drive controller. make sure the controller is installed correctly and firmly. If there are no floppy drives installed, be sure the Diskette Drive selection in Setup is set to NONE.

Invalid EISA Configuration
PLEASE RUN EISA CONFIGURATION UTILITY

The non-volatile memory containing EISA configuration information was programmed incorrectly or has become corrupt. Re-run EISA configuration utility to correctly program the memory.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

KEYBOARD ERROR OR NO KEYBOARD PRESENT

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

If you are purposely configuring the system without a keyboard, set the error halt condition in Setup to HALT ON ALL, BUT KEYBOARD. This will cause the BIOS to ignore the missing keyboard and continue the boot.

Memory Address Error at ...

Indicates a memory address error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

Memory parity Error at ...

Indicates a memory parity error at a specific location. You can use this location along with the memory map for your system to find and replace the bad memory chips.

MEMORY SIZE HAS CHANGED SINCE LAST BOOT

Memory has been added or removed since the last boot. In EISA mode use Configuration Utility to reconfigure the memory configuration. In ISA mode enter Setup and enter the new memory size in the memory fields.

Memory Verify Error at ...

Indicates an error verifying a value already written to memory. Use the location along with your system's memory map to locate the bad chip.

OFFENDING ADDRESS NOT FOUND

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem cannot be isolated.

OFFENDING SEGMENT:

This message is used in conjunction with the I/O CHANNEL CHECK and RAM PARITY ERROR messages when the segment that has caused the problem has been isolated.

PRESS A KEY TO REBOOT

This will be displayed at the bottom screen when an error occurs that requires you to reboot. Press any key and the system will reboot.

PRESS F1 TO DISABLE NMI, F2 TO REBOOT

When BIOS detects a Non-maskable Interrupt condition during boot, this will allow you to disable the NMI and continue to boot, or you can reboot the system with the NMI enabled.

RAM PARITY ERROR - CHECKING FOR SEGMENT ...

Indicates a parity error in Random Access Memory.

Should Be Empty But EISA Board Found
PLEASE RUN EISA CONFIGURATION UTILITY

A valid board ID was found in a slot that was configured as having no board ID.

NOTE; When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Should Have EISA Board But Not Found
PLEASE RUN EISA CONFIGURATION UTILITY

The board installed is not responding to the ID request, or no board ID has been found in the indicated slot.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

Slot Not Empty

Indicates that a slot designated as empty by the EISA Configuration Utility actually contains a board.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

SYSTEM HALTED, (CTRL-ALT-DEL) TO REBOOT ...

Indicates the present boot attempt has been aborted and the system must be rebooted. Press and hold down the CTRL and ALT keys and press DEL.

Wrong Board In Slot
PLEASE RUN EISA CONFIGURATION UTILITY

The board ID does not match the ID stored in the EISA non-volatile memory.

NOTE: When this error appears, the system will boot in ISA mode, which allows you to run the EISA Configuration Utility.

FLOPPY DISK(S) fail (80) → Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40) → Floppy Type dismatch.

Hard Disk(s) fail (80) → HDD reset failed

Hard Disk(s) fail (40) → HDD controller diagnostics failed.

Hard Disk(s) fail (20) → HDD initialization error.

Hard Disk(s) fail (10) → Unable to recalibrate fixed disk.

Hard Disk(s) fail (08) → Sector Verify failed.

Keyboard is locked out - Unlock the key.

Keyboard error or no keyboard present.

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

BIOS ROM checksum error - System halted.

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail.

BIOS reports the memory test fail if the onboard memory is tested error.

4.15 BIOS POST Check Point List

AWARDBIOS provides all IBM standard Power On Self Test (POST) routines as well as enhanced AWARDBIOS POST routines. The POST routines support CPU internal diagnostics. The POST checkpoint codes are accessible via the Manufacturing Test Port (I/O port 80h).

Whenever a recoverable error occurs during the POST, the system BIOS will display an error message describing the message and explaining the problem in detail so that the problem can be corrected.

During the POST, the BIOS signals a checkpoint by issuing one code to I/O address 80H. This code can be used to establish how far the BIOS has executed through the power-on sequence and what test is currently being performed. This is done to help troubleshoot faulty system board.

If the BIOS detects a terminal error condition, it will halt the POST process and attempt to display the checkpoint code written to port 80H. If the system hangs before the BIOS detects the terminal error, the value at port 80H will be the last test performed. In this case, the terminal error cannot be displayed on the screen. The following POST checkpoint codes are valid for all AWARDBIOS products with a core BIOS date of 07/15/95 version 6.27 (Enhanced).

Code	Description
CFh	Test CMOS R/W functionality.
C0h	Early chipset initialization: -Disable shadow RAM -Disable L2 cache (socket 7 or below) -Program basic chipset registers
C1h	Detect memory -Auto-detection of DRAM size, type and ECC. -Auto-detection of L2 cache (socket 7 or below)
C3h	Expand compressed BIOS code to DRAM
C5h	Call chipset hook to copy BIOS back to E000 & F000 shadow RAM.
0h1	Expand the Xgroup codes locating in physical address 1000:0

Code	Description
02h	Reserved
03h	Initial Superio_Early_Init switch.
04h	Reserved
05h	1. Blank out screen 2. Clear CMOS error flag
06h	Reserved
07h	1. Clear 8042 interface 2. Initialize 8042 self-test

Code	Description
08h	1. Test special keyboard controller for Winbond 977 series Super I/O chips. 2. Enable keyboard interface.
09h	Reserved
0Ah	Disable PS/2 mouse interface (optional). Auto detect ports for keyboard & mouse followed by a port & interface swap (optional). Reset keyboard for Winbond 977 series Super I/O chips.
0Bh	Reserved
0Ch	Reserved
0Dh	Reserved
0Eh	Test F000h segment shadow to see whether it is R/W-able or not. If test fails, keep beeping the speaker.
0Fh	Reserved
10h	Auto detect flash type to load appropriate flash R/W codes into the run time area in F000 for ESCD & DMI support.
11h	Reserved
12h	Use walking 1's algorithm to check out interface in CMOS circuitry. Also set real-time clock power status, and then check for override.
13h	Reserved
14h	Program chipset default values into chipset. Chipset default values are MODBINable by OEM customers.
15h	Reeserved
16h	Initial Early_Init_Onboard_Generator switch.
17h	Reserved
18h	Detect CPU information including brand, SMI type (Cyrix or Intel) and CPU level (586 or 686).
19h	Reserved
1Ah	Reserved
1Bh	Initial interrupts vector table. If no special specified, all H/W interrupts are directed to SPURIOUS_INT_HDLR & S/W interrupts to SPURIOUS_soft_HDLR.
1Ch	Reserved
1Dh	Initial EARLY_PM_INIT switch.
1Eh	Reserved
1Fh	Load keyboard matrix (notebook platform)
20h	Reserved
21h	HPM initialization (notebook platform)
22h	Reserved
23h	1. Check validity of RTC value: e.g. a value of 5Ah is an invalid value for RTC minute. 2. Load CMOS settings into BIOS stack. If CMOS checksum fails, use default value instead. 3. Prepare BIOS resource map for PCI & PnP use. If ESCD is valid, take into consideration of the ESCD's legacy information. 4. Onboard clock generator initialization. Disable respective clock resource to empty PCI & DIMM slots. 5. Early PCI initialization: -Enumerate PCI bus number -Assign memory & I/O resource -Search for a valid VGA device & VGA BIOS, and put it into C000:0.

Code	Description
24h	Reserved
25h	Reserved
26h	Reserved
27h	Initialize INT 09 buffer
28h	Reserved
29h	Program CPU internal MTRR (P6 & PII) for 0-640K memory address. Initialize the APIC for Pentium class CPU. Program early chipset according to CMOS setup. Example: onboard IDE controller. Measure CPU speed. Invoke video BIOS.
2Ah	Reserved
2Bh	Reserved
2Ch	Reserved
2Dh	Initialize multi-language. Put information on screen display, including Award title, CPU type, CPU speed ….
2Eh	Reserved
2Fh	Reserved
30h	Reserved
31h	Reserved
32h	Reserved
33h	Reset keyboard except Winbond 977 series Super I/O chips.
34h	Reserved
35h	Reserved
36h	Reserved
37h	Reserved
38h	Reserved
39h	Reserved
3Ah	Reserved
3Bh	Reserved
3Ch	Test 8254
3Dh	Reserved
3Eh	Test 8259 interrupt mask bits for channel 1.
3Fh	Reserved
40h	Test 8259 interrupt mask bits for channel 2.
41h	Reserved
42h	Reserved
43h	Test 8259 functionality.
44h	Reserved
45h	Reserved
46h	Reserved
47h	Initialize EISA slot
48h	Reserved
49h	1. Calculate total memory by testing the last double word of each 64K page. 2. Program writes allocation for AMD K5 CPU.
4Ah	Reserved
4Bh	Reserved
4Ch	Reserved
4Dh	Reserved
4Eh	1. Program MTRR of M1 CPU 2. Initialize L2 cache for P6 class CPU & program CPU with proper cacheable range.

Code	Description
	3. Initialize the APIC for P6 class CPU. 4. On MP platform, adjust the cacheable range to smaller one in case the cacheable ranges between each CPU are not identical.
4Fh	Reserved
50h	Initialize USB
51h	Reserved
52h	Test all memory (clear all extended memory to 0)
53h	Reserved
54h	Reserved
55h	Display number of processors (multi-processor platform)
56h	Reserved
57h	1. Display PnP logo 2. Early ISA PnP initialization -Assign CSN to every ISA PnP device.
58h	Reserved
59h	Initialize the combined Trend Anti-Virus code.
5Ah	Reserved
5Bh	(Optional Feature) Show message for entering AWDFLASH.EXE from FDD (optional)
5Ch	Reserved
5Dh	1. Initialize Init_Onboard_Super_IO switch. 2. Initialize Init_Onbaord_AUDIO switch.
5Eh	Reserved
5Fh	Reserved
60h	Okay to enter Setup utility; i.e. not until this POST stage can users enter the CMOS setup utility.
61h	Reserved
62h	Reserved
63h	Reserved
64h	Reserved
65h	Initialize PS/2 Mouse
66h	Reserved
67h	Prepare memory size information for function call: INT 15h ax=E820h
68h	Reserved
69h	Turn on L2 cache
6Ah	Reserved
6Bh	Program chipset registers according to items described in Setup & Auto-configuration table.
6Ch	Reserved
6Dh	1. Assign resources to all ISA PnP devices. 2. Auto assign ports to onboard COM ports if the corresponding item in Setup is set to “AUTO”.
6Eh	Reserved
6Fh	1. Initialize floppy controller 2. Set up floppy related fields in 40:hardware.
70h	Reserved
71h	Reserved
72h	Reserved

Code	Description
73h	(Optional Feature) Enter AWDFLASH.EXE if : -AWDFLASH is found in floppy drive. -ALT+F2 is pressed
74h	Reserved
75h	Detect & install all IDE devices: HDD, LS120, ZIP, CDROM…..
76h	Reserved
77h	Detect serial ports & parallel ports.
78h	Reserved
79h	Reserved
7Ah	Detect & install co-processor
7Bh	Reserved
7Ch	Reserved
7Dh	Reserved
7Eh	Reserved
7Fh	1. Switch back to text mode if full screen logo is supported. -If errors occur, report errors & wait for keys -If no errors occur or F1 key is pressed to continue: ◆Clear EPA or customization logo.
80h	Reserved
81h	Reserved
82h	1. Call chipset power management hook. 2. Recover the text fond used by EPA logo (not for full screen logo) 3. If password is set, ask for password.
83h	Save all data in stack back to CMOS
84h	Initialize ISA PnP boot devices
85h	1. USB final Initialization 2. NET PC: Build SYSID structure 3. Switch screen back to text mode 4. Set up ACPI table at top of memory. 5. Invoke ISA adapter ROMs 6. Assign IRQs to PCI devices 7. Initialize APM 8. Clear noise of IRQs.
86h	Reserved
87h	Reserved
88h	Reserved
89h	Reserved
90h	Reserved
91h	Reserved
92h	Reserved
93h	Read HDD boot sector information for Trend Anti-Virus code
94h	1. Enable L2 cache 2. Program boot up speed 3. Chipset final initialization. 4. Power management final initialization 5. Clear screen & display summary table 6. Program K6 write allocation 7. Program P6 class write combining

Code	Description
95h	1. Program daylight saving 2. Update keyboard LED & typematic rate
96h	1. Build MP table 2. Build & update ESCD 3. Set CMOS century to 20h or 19h 4. Load CMOS time into DOS timer tick 5. Build MSIRQ routing table.
FFh	Boot attempt (INT 19h)

4.16 BIOS Flash Utility

Utilize AWARD Flash BIOS programming utility to update on-board BIOS for the future new BIOS version. Please contact your technical window to get this utility if necessary.

NOTE : Remark or delete any installed Memory Management Utility (such as HIMEM.SYS, EMM386.EXE, QEMM.EXE, …, etc.) in the CONFIG.SYS files before running Flash programming utility.